

**PROGRAM CHARTER  
FOR  
CORAL REEF CONSERVATION PROGRAM**

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**1. EXECUTIVE SUMMARY.**

The NOAA Coral Reef Conservation Program (CRCP) supports effective management and sound science to preserve, sustain, and restore coral reef ecosystems. NOAA's significant responsibilities to conserve and manage coral reef resources are outlined in legal and administrative mandates and international treaties, including the Coral Reef Conservation Act of 2000 (other drivers listed in Section 2).

Through the CRCP, NOAA works closely with other Federal agencies, state and territory governments, and non-governmental organization (NGO) partners, to reduce the impacts of key threats to coral reef ecosystems in seven coral reef jurisdictions: Florida, Puerto Rico, U.S. Virgin Islands, Hawaii, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands. The CRCP also works with a variety of government and non-governmental partners to support coral reef conservation projects internationally. The CRCP directly supports NOAA's role as co-chair of the U.S. Coral Reef Task Force (CRTF). The CRTF was established by Executive Order 13089 to lead and coordinate U.S. efforts. NOAA helps implement coral reef conservation actions in response to threats identified as high priority by the CRTF: overfishing, land-based sources of pollution, climate change and coral bleaching, disease, recreational overuse and misuse, and lack of public awareness.

As part of its national program, the CRCP supports both internal and external mapping, monitoring, research, outreach and education, and management activities. External activities include providing direct assistance to states and territories, non-governmental organizations, and research institutions to aid their efforts in critical initiatives, such as coral reef management, monitoring, outreach and education, and research. The CRCP is a matrix-managed program that is a member of the Ecosystems Goal and participates with other Goal Teams, including the Climate Goal. The CRCP has a variety of mechanisms to annually engage and solicit input from NOAA and non-NOAA partners on current activities and future priorities, which assists with annual and outyear planning and implementation. Additional information about the CRCP can be found at: [www.coralreef.noaa.gov](http://www.coralreef.noaa.gov).

**2. PROGRAM REQUIREMENTS.**

## A. Requirement Drivers

Key domestic and international requirement drivers are listed below and additional detail can be found in Appendix A.

### 1. Legislation

- a. **The Coral Reef Conservation Act of 2000** – This Act is the primary driver for the CRCP activities by directing NOAA to develop and implement a national strategy and program for coral reef conservation and management that includes coastal uses and management; water and air quality; mapping and information management; research, monitoring, and assessment; international and regional issues; outreach and education; local strategies developed by the States and Federal agencies, including regional fishery management councils; and conservation, including how the use of marine protected areas to serve as replenishment zones will be developed consistent with local practices and traditions.
- b. **Magnuson-Stevens Fishery Conservation and Management Act** – Provisions in part provide for the collection of reliable fisheries and habitat data, the conservation and enhancement of essential fish habitat, coordination and consultation with other Federal agencies, and the development of Fishery Management Plans, several of which include coral reef ecosystem fishery species. The Act also authorizes the establishment of a *Deep Sea Coral Research and Technology Program*. The objectives of the program are to: locate and map deep sea corals; monitor activity in locations where deep sea corals occur; conduct cooperative research on deep sea corals, related species and on survey methods; develop technologies to reduce interactions between fishing gear and deep sea corals; and prioritize program activities in areas where deep sea coral are known to occur and in areas where scientific modeling or other methods predict deep sea corals are likely to be present. The Act also requires biennial reports to Congress on steps taken to identify, monitor and protect deep sea coral areas.
- c. **Coastal Zone Management Act** – Provides direction for NOAA and the CRCP to work with state/territory and local entities to collaboratively develop coral reef management actions.
- d. **National Marine Sanctuary Act** - Four of the thirteen National Marine Sanctuaries and the Northwest Hawaiian Islands Marine National Monument contain coral reef resources and coordinate with the CRCP.
- e. **Endangered Species Act** – Species that rely on coral reef ecosystems including certain species of sea turtles, marine mammals, corals, and groupers are protected under the Endangered Species Act. Also, two species of *Acropora* coral have been listed as “threatened” under the ESA.

### 2. Executive Order

- a. **Executive Order 13089: Coral Reef Protection** – Establishes the U.S. Coral Reef Task Force, which NOAA co-chairs, and calls for the development and implementation of the *National Action Plan to Conserve Coral Reefs*.

### 3. Interagency or International Agreement

- a. **International Coral Reef Initiative** – Members (including U.S.) are encouraged to strengthen their commitment to implementation of programs at the local, regional, national (i.e. CRCP) and international levels to conserve, restore and promote sustainable use of coral reef ecosystems. As called for in the Administration’s Ocean Action Plan, the United States will co-host the International Coral Reef Initiative Secretariat from 2007-2009.

### 4. Policy Decision

- a. **U.S. Ocean Action Plan** – Specifically directs NOAA to accomplish several tasks associated with coral reef conservation and management including: 1) implementation of Local Action Strategies; 2) protect the Northwestern Hawaiian Island Coral Reef Ecosystem Reserve (now Marine National Monument); 3) co-host the International Coral Reef Initiative; 4) form new international partnerships to enhance management of coral reefs; 5) develop “biocriteria” for coral reefs; 6) research, survey, and protect deep-sea coral communities; 7) complete two international deep-sea coral exploration missions; 8) encourage protection of deep-sea corals when developing and implementing regional fishery management plans; and 9) develop and complete a status report on deep-sea corals in the U.S. EEZ.

## B. Mission Requirements

Requirements derived from CRCP primary drivers include:

Note: For more detail and direct linkages to drivers refer to Appendix A.

1. Preserve, sustain, restore, and enhance the condition of coral reef ecosystems, including deep coral ecosystems, while promoting the wise management and sustainable use of these and associated environments at the local, national, regional, and international levels. (Coral Reef Conservation Act, U.S. Ocean Action Plan, International Coral Reef Initiative, Coastal Zone Management Act, National Marine Sanctuary Act, Magnuson-Stevens Fishery Conservation and Management Act)
2. Support conservation programs, provide financial resources for coral reef conservation and management projects, including projects that involve local communities and nongovernmental organizations, and establish a formal mechanism for collecting and allocating monetary donations from the private sector. (Coral Reef Conservation Act, U.S. Ocean Action Plan)
3. Develop sound scientific information on the condition of and threats to coral reefs, including deep coral ecosystems, through implementation of coral reef mapping, monitoring, research, conservation, mitigation and restoration, and international cooperation, and ensure a flow of this information among coral reef conservation partners through effective data management, outreach, and education efforts, including the U.S. Coral Reef Task Force, which NOAA co-chairs. (Coral Reef Conservation Act;

Executive Order 13089: Coral Reef Protection; U.S. Ocean Action Plan; International Coral Reef Initiative; Magnuson-Stevens Fishery Conservation and Management Act; National Marine Sanctuary Act; Endangered Species Act)

### **3. LINKS TO THE NOAA STRATEGIC PLAN**

The CRCP supports the following NOAA outcomes, objectives, and strategies under the Ecosystem Goal:

#### **A. Goal outcomes:**

##### **1. Healthy and productive coastal and marine ecosystems that benefit society.**

- a. CRCP's management actions are implemented to reduce the key threats to coral reefs and result in improved ecosystem condition and subsequently increased benefits to the communities that depend on coral reefs.

##### **2. A well-informed public that acts as a steward of coastal and marine ecosystems.**

- a. CRCP implements an outreach and education program that provides tools and technical assistance to local state/territory personnel to enable them to effectively communicate coral reef issues to resource users and the public.

#### **B. Goal performance objectives:**

The CRCP supports the goal performance objectives listed below through the goal strategies and program activities in the next section.

1. Increase number of regional coastal and marine ecosystems delineated with approved indicators of ecological health and socioeconomic benefits that are monitored and understood.
2. Increase portion of population that is knowledgeable of and acting as stewards for coastal and marine ecosystems.
3. Increase number of coastal communities incorporating ecosystem and sustainable development principles into planning and management.
4. Increase the number of fish stocks managed at sustainable levels.

#### **C. Goal strategies:**

The CRCP supports the following goal strategies through specific program activities.

##### **1. Engage and collaborate with our partners to achieve regional objectives by delineating regional ecosystems, promoting partnerships at the ecosystem level, and implementing cooperative strategies to improve regional ecosystem health.**

- a. The CRCP collaborates with federal, regional, state and local partners through the U.S. Coral Reef Task Force and NOAA's activities to implement management action addressing the key threats to coral reef ecosystems including overfishing, land-based sources of pollution, lack of public awareness, climate change, coral disease, and

recreational overuse/misuse. For example, CRCP supports the development and implementation of Local Action Strategies with state, territorial and local partners. The Program also provides grants to state agencies, universities and NGO's for management initiatives. CRCP also has a coral reef management fellowship program, which provides critical on-the-ground management capacity support.

- 2. Manage uses of ecosystems by applying scientifically sound observations, assessments, and research findings to ensure the sustainable use of resources and to balance competing uses of coastal and marine ecosystems.**
  - a. CRCP conducts targeted coral reef ecosystem research and provides support to regional coral reef institutes and other external partners (through a competitive grants program) to conduct high-priority coral reef research to meet management objectives. CRCP also observes, characterizes, monitors, and assesses benthic habitats of shallow and moderate-depth coral reef ecosystems, and provides grants to states and territories to support additional monitoring activities. CRCP also conducts research related to deep coral ecosystems and provides this information to fishery management councils to support ecosystem-based management decisions.
- 3. Improve resource management by advancing our understanding of ecosystems through better simulation and predictive models. Build and advance the capabilities of an ecological component of the NOAA global environmental observing system to monitor, assess, and predict national and regional ecosystem health, as well as to gather information consistent with established social and economic indicators.**
  - a. CRCP observes, characterizes, monitors, and assesses benthic habitats of shallow and moderate-depth coral reef ecosystems through a variety of platforms. The CRCP also uses modeling to better understand the impacts of climate change and enhance coral reef resiliency through management action. Using the climate and ecosystem models, the Program provides automated coral reef bleaching alerts to local resource managers. In addition, CRCP supports deep-sea coral mapping and data analysis to better understand the location, extent, structure, and function of these ecosystems and the degree of impact caused by human activities.
- 4. Develop coordinated regional and national outreach and education efforts to improve public understanding and involvement in stewardship of coastal and marine ecosystems.**
  - a. CRCP provides tools and technical assistance to local state/territory personnel to enable them to effectively communicate coral reef issues to resource users and the public. Through the Coral Reef Information System, CRCP is able to provide single point of access to all NOAA coral reef information and data products.
- 5. Engage in technological and scientific exchange with our domestic and international partners to protect, restore, and manage marine resources within and beyond the Nation's borders.**
  - a. CRCP maintains a number of international partnerships to exchange expertise and information with other countries facing similar coral ecosystem conservation and management challenges.

#### 4. PROGRAM OUTCOMES

- A. The impacts of climate change and coral disease are understood and reduced to enhance resiliency of coral reef ecosystems.
- B. Direct physical impacts from maritime industry and natural/non-natural hazards are reduced to improve navigation safety and preserve productive coral reef ecosystems.
- C. Impacts from coastal uses and land-based activities are reduced to preserve coral reef ecosystems that many communities depend on for food, jobs, coastal protection, and other uses.
- D. Overfishing in coral reef ecosystems is reduced and other adverse impacts from commercial and recreational fishing are minimized to stabilize or increase fish populations in these systems.
- E. Deep coral communities are located and understood to reduce adverse impacts from human activities to protect these vulnerable and diverse ecosystems.

#### 5. PROGRAM ROLES AND RESPONSIBILITIES.

This matrix program is established and managed with the procedures established in the NOAA Business Operations Manual (BOM). Responsibilities of the Program Manager are described in the BOM. Responsibilities of other major participants are summarized below:

##### A. Participating Line Office, Staff Office, and Council Responsibilities:

1. The NOAA Fisheries Service is responsible for coordination and consultation with the other line offices through representation on the NOAA Coral Reef Senior Management Council (CRSMC). The CRSMC, which includes a senior manager from each participating line office, provides strategic direction for the program and is responsible for all funding decisions and execution aspects of the program. NOAA Fisheries Service contributes to NOAA mandates under the Coral Reef Conservation Act of 2000 (CRCA) through research (fisheries-related), mapping, monitoring and assessments, modeling, coral reef management, coordination with Regional Fishery Management Councils, and leadership of coral reef fisheries related efforts. NOAA Fisheries Service manages the most extensive NOAA field presence for management and research in areas with coral reef resources, through its Southeast and Pacific Islands Regional Offices and Science Centers. NOAA Fisheries Service also manages the General and Fishery Management components of the Coral Reef Conservation Grants Program and participates in other components of the Grants Program and the Coral Reef Conservation Fund. NOAA Fisheries Service co-chairs the Deep Coral Team and coordinates fishery management and habitat efforts affecting deep coral ecosystems in the U.S. EEZ.
2. NOAA Research is responsible for coordination and consultation with the other line offices through representation on the NOAA CRSMC. NOAA Research conducts strategic coral reef research to increase understanding of ecological and



oceanographic processes that govern the structure and function of coral reef ecosystems, their response to environmental stressors, and how human activities influence coral reefs. This research helps fulfill NOAA's responsibilities under the CRCA in coordination with the other participating line offices. NOAA Research and NOAA Ocean Service and in coordination with NOAA Fisheries Service and NOAA Satellites and Information, developed the first *NOAA Coral Reef Ecosystem Research Plan* released in March 2007. NOAA Research also co-chairs the Deep Coral Team and coordinates on NOAA Research-supported activities on deep coral ecosystems.

3. NOAA Satellites and Information is responsible for coordination and consultation with the other line offices through representation on the NOAA CRSMC. NOAA Satellites and Information provides development, implementation, and coordination of remote sensing efforts to help monitor key indices of coral reef ecosystem condition. This includes production of a variety of information and products including coral reef ecosystem alerts that provide early warnings of bleaching or other reef related events, and the maintenance of these data over time. These monitoring efforts provide a global service to U.S. and international researchers and managers and enable NOAA to participate in international efforts for the coordination and integration of remote sensing and *in situ* observing efforts. NOAA Satellites also manages NOAA's web-based Coral Reef Information System to provide one-stop access to NOAA information on coral reef ecosystems.
4. NOAA Ocean Service is responsible for coordination and consultation with the other line offices through representation on the NOAA CRSMC. NOAA Ocean Service serves as Line Office host and Program Manager for the CRCP, and leads the efforts required of NOAA under CRCA by facilitating the joint coordination of coral reef ecosystem activities across NOAA including public outreach and education. NOAA Ocean Service also implements a wide variety of activities within the CRCP: mapping; continuing the National Coral Reef Monitoring Program; conducting strategic research, including completion of the *NOAA Coral Reef Ecosystem Research Plan* as co-lead with NOAA Research and in coordination with NOAA Fisheries Service and NOAA Satellites and Information; increasing effectiveness of coral reef marine protected areas; reducing pollution; working to strengthen coral reef ecosystem management capacity in the states and territories; managing coral reef areas within National Marine Sanctuaries; and coordinating the Coral Reef Conservation Grants Program and Coral Reef Conservation Fund. NOAA Ocean Service manages the Northwestern Hawaiian Islands Marine National Monument and funds the Coral Reef Institutes in Florida, Hawaii, and Puerto Rico. NOAA Ocean Service also provides staff and other support to the NOAA Administrator in his role as co-chair of the U.S. Coral Reef Task Force.
5. Office of Public, Constituent, and Intergovernmental Affairs provides timely press releases on NOAA coral reef related achievements, conferences, and

- products.
6. Office of Legislative Affairs coordinates responses to Congressional inquiries and communicates with Congressional staff on coral reef related issues including deep sea corals, coral reef mapping efforts, and emergency situations (e.g. vessel groundings).
  7. Office of the General Council (GC) reviews responses to Congressional inquiries and publications including Coral Reef Program Effectiveness Report and technical drafting assistance on the Coral Reef Conservation Act reauthorization. GC also reviews Fishery Management Plans and implementing regulations that contain measures to conserve and manage coral reef ecosystem fishery resources. GC also reviews documents produced during both Endangered Species Act (ESA) and essential fish habitat consultations on matters that may involve coral reef ecosystems, and also reviews and provides guidance in matters involving the listing of coral reef ecosystem species under the ESA.
  8. Office of Education leads NOAA and the CRCP in articulating, assessing and sustaining a comprehensive education program directly supporting NOAA's mission.
  9. Grants Management Division facilitates awards for the Coral Reef Conservation Grants Program and the Coral Reef Conservation Fund grants.
  10. NOAA Ocean Council directs CRCP in U.S. Ocean Action Plan coral reef related actions.
  11. NOAA Observing System Council provides guidance for tasks related to prioritization of NOAA's observing capabilities including the Coral Reef Ecosystem Integrated Observing System.
  12. NOAA Education Council provides opportunities for the CRCP to contribute to NOAA-wide education efforts.
  13. NOAA Research Council provides feedback on CRCP research plans.
  14. NOAA Platform Allocation Council determines distribution of NOAA ship time in the CRCP.

## **B. External Agency/Organization Responsibilities**

1. Federal Agencies
  - a. Department of the Interior – partners with the CRCP to administer the state and territory grants program and in coral reef monitoring and research conducted in National Fish and Wildlife Refuges and Parks. DOI also co-chairs the CRTF with NOAA.
  - b. U.S. Department of Agriculture – partners with the CRCP in supporting the Coral Reef Conservation Fund; member of the CRTF and partner in Local Action Strategy projects.
  - c. Other Coral Reef Task Force agencies (Department of Homeland Security/ Coast Guard, Department of Defense, Department of Justice, Department of State, Department of Transportation, Environmental Protection Agency,



National Aeronautics and Space Administration, National Science Foundation, and the U.S. Agency for International Development) partner with the CRCP on a project-by-project basis.

2. States and Territories (Florida, Puerto Rico, U.S. Virgin Islands, Hawaii, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands) – partner with the CRCP on a variety of coral reef conservation and management activities including identifying priorities through the development of local action strategies.
3. National Fish and Wildlife Foundation – partners with the CRCP in administration of the Coral Reef Conservation Fund grants program.
4. Regional Fishery Management Councils partner with the CRCP in activities related to the development of fishery management plans affecting coral reef or deep coral resources in the U.S. EEZ.
5. National Coral Reef Institute, Hawaii Coral Reef Institute, and the Caribbean Coral Reef Institute – provide coral reef ecosystem research on topics including coral disease, invasive species, and land-based sources of pollution. The institutes conduct research in coordination with the CRCP to avoid duplication of effort.
6. Australian Institute of Marine Science, Great Barrier Reef Marine Park Authority, and the University of Queensland – partners with the CRCP to conduct targeted research, modeling and observations in coral reef ecosystems.
7. Universities – CRCP relies on partnerships with universities to augment NOAA’s internal mapping, monitoring, and research with external expertise, including administration of a peer-reviewed CRCP research grants program through university-based NURP centers; and provide the necessary infrastructure to ensure that both federal and non-federal scientists have access to advanced diving assets (including NOAA’s Aquarius, the world’s only undersea laboratory) to enable scientists to dive in a safe manner for longer periods of time.

## **6. END USERS OR BENEFICIARIES OF PROGRAM**

- A. State/Territory governments and local resource managers – CRCP tailors its products and services including mapping, monitoring, research and management assistance to meet state/territory and local manager needs.
- B. Federal Agencies and Fishery Management Councils – Use NOAA data, products and services to assist in fulfilling their goals and objectives.
- C. Other NOAA Programs – Data, products, and services are available to other NOAA Programs (CMRP, Habitat, Ecosystem Research, and Emergency Response) to use as tools to leverage their own activities in meeting program requirements.
- D. Academia – CRCP awards extramural research grants to better understand the ecological and oceanographic processes that govern the structure and function of coral reef ecosystems, their response to stressors, and how human activities influence coral reefs.

- E. Resource users/general public – CRCP provides outreach and education materials to help coral reef users modify their behavior to act as a steward of coral reef ecosystems. CRCP activities work to conserve coral reef ecosystems for future generations.
- F. Non-governmental organizations – CRCP provides funding opportunities to conduct on-the-ground coral reef conservation activities in support of their organization goals and objectives.
- G. International partners – CRCP provides data, products, and services to assist international entities in reducing global threats to coral reefs through building human and institutional capacity for integrated coastal and watershed management. The CRCP deep coral team also provides input on the improvement of protection of deep coral communities from the effects of fishing outside of territorial waters.
- H. Private sector – CRCP provides information to the private sector (e.g. dive industry, tourism sectors, shipping and boating, and the fishing industry) on coral reef conditions and best practices to assist them in reef conservation efforts.

**APPENDIX A: Detailed Mission Requirements and Driver Descriptions****A. Coral Reef Conservation Act of 2000**

1. Charges the Administrator of NOAA to:
  - a. preserve, sustain, and restore the condition of coral reef ecosystems;
  - b. promote the wise management and sustainable use of coral reefs;
  - c. develop sound scientific information on the condition and threats to coral reefs;
  - d. support conservation programs, and provide financial resources for coral reef conservation and management projects.
2. Requires development of:
  - a. a National Coral Reef Action Strategy;
  - b. a coral reef conservation grants program;
  - c. a Coral Reef Conservation Fund in partnership with a nonprofit organization to collect and allocate monetary donations from the private sector for coral reef conservation projects; and
  - d. an emergency assistance program;
  - e. a national program that conducts conservation activities consistent with other Federal regulations; and
  - f. effectiveness reports for the grants program and the national program.

**B. Executive Order 13089**

1. Directs all Federal agencies whose actions may affect U.S. coral reef ecosystems to:
  - a. identify their actions that may affect coral reef ecosystems;
    - b. utilize their programs and authorities to protect and enhance the conditions of such ecosystems; and
    - c. to the extent permitted by law, ensure that any actions they authorize, fund, or carry out will not degrade the conditions of coral reef ecosystems.
2. Specific direction given to Federal agencies to:
  - a. establish the US Coral Reef Task Force (NOAA co-chair)
  - a. implement coral reef mapping, monitoring, research, conservation, mitigation and restoration, and international cooperation.

**C. U.S. Coral Reef Task Force Actions and Resolutions**

1. *National Action Plan to Conserve Coral Reefs* – Outlines 13 goals to provide a comprehensive road map for federal, state, territorial, and local action to reverse the worldwide decline and loss of coral reefs.
2. Resolution (passed in October 2002) aimed at improving implementation of the *National Action Plan to Conserve Coral Reefs* through the development of Local Action Strategies. The goal was to improve coordinated local level implementation of coral reef conservation measures. These three-year roadmaps for collaborative action have been developed by the states and territories to address

six key threats (overfishing, land-based sources of pollution, lack of public awareness, recreational overuse/misuse, climate change, and coral disease) to coral reefs. The Local Action Strategies aid NOAA in providing targeted assistance to states and territories for high-priority coral reef activities.

3. Thirty-four other resolutions, including many directly affecting NOAA

#### **D. National Marine Sanctuary Act**

1. Identifies and designates as national marine sanctuaries areas of the marine environment which are of special national significance including coral reef ecosystems;
2. Develops and implements coordinated plans for the protection and management of the coral reefs in sanctuary-designated areas;
3. Maintains the natural biological communities (including coral reefs) in the national marine sanctuaries, and protects (where appropriate), restores and enhances natural habitats, populations, and ecological processes; and
4. Promotes scientific research and enhances public awareness of coral reef conservation issues.

#### **E. Magnuson-Stevens Fishery Conservation and Management Act**

1. The MSA provides for the conservation and management of the Nation's fishery resources through the preparation of fishery management plans (FMPs) for each fishery under the jurisdiction of the relevant regional fishery management council or the Secretary of Commerce through NMFS, as appropriate.
2. The MSA provides for the collection of fisheries and habitat data and several FMPs also include measures for the conservation and management of coral reef ecosystem species. In addition, one of the required provisions of FMPs mandates that essential fish habitat (EFH) is identified and described for the fishery, adverse fishing impacts on EFH are minimized to the extent practicable, and other actions to conserve and enhance EFH are identified. EFH encompasses many coral reef ecosystem fishery resources. The MSA also mandates that NMFS coordinate with and provide information to Federal agencies to further the conservation and enhancement of EFH. Federal agencies must coordinate with NMFS on any action that may adversely affect EFH. When NMFS finds that a Federal or State action would adversely affect EFH, NMFS is required to provide conservation recommendations. Such recommendations are non-binding on the receiving Federal and State agencies and require a response only from the Federal action agencies.
3. The MSA also provides for the conservation and management of deep coral communities through the creation of deep coral zones in FMPs. FMPs may designate zones for the protection of deep sea corals for areas where deep sea corals have been identified under MSA §408 based on the best available scientific information, assessing conservation benefit; and with an assessment of benefits and

impacts of closure.

4. The MSA requires the Secretary to establish a *Deep Sea Coral Research and Technology Program* to:
  1. identify existing research on known locations of deep sea corals;
  2. locate and map locations of deep sea corals;
  3. monitor activity in locations where deep sea corals are known or are likely to occur;
  4. conduct research on deep sea corals and related species;
  5. develop technologies or methods to assist fishing industry participants to reduce interactions between fishing gear and deep sea corals;
  6. prioritize program activities in areas where deep sea corals are known to occur, and in areas where scientific modeling or other methods predict deep sea corals are likely to be present; and
  7. submit biennial reports, in consultation with the Councils, to Congress on steps taken to identify, monitor and protect, deep coral areas.
5. The MSA requires the Secretary to take action to end illegal, unreported, or unregulated (IUU) fishing and reduce bycatch of protected marine species. The Secretary must define IUU fishing and that definition must include “fishing activity, including bottom trawling, that have adverse impacts on seamounts, hydrothermal vents, and cold water corals located beyond national jurisdiction, for which there are no applicable conservation or management measures or in areas with no applicable international fishery management organization or agreement.”

## F. Endangered Species Act

1. The ESA provides a means for the conservation of ecosystems upon which endangered and threatened species depend.
2. Under the ESA, NMFS (for marine species) and U.S. Fish and Wildlife Service (for terrestrial species) list species as endangered or threatened, and in some circumstances designate critical habitat. NMFS and FWS also develop recovery plans for listed species. Once listed, the ESA requires that each Federal agency, in consultation with NMFS and/or the FWS, must ensure that its actions are not likely to jeopardize the continued existence of any listed species or destroy or adversely modify any designated critical habitat.
3. “Take” - defined to include harm and harassment as well as hunting and killing - of individual members of endangered species is prohibited. NMFS and FWS may extend that prohibition to threatened species. Federal and non-Federal actors may get permits for take for scientific research and enhancement of the species. Federal and non-Federal actors may get authorization for incidental take.
4. The ESA provides for civil and criminal penalties.

**G. Coastal Zone Management Act**

1. Calls for the protection of natural resources, including wetlands, floodplains, estuaries, beaches, dunes, barrier islands, coral reefs, and fish and wildlife and their habitat, within the coastal zone; and
2. Encourages and assists states in exercising effectively their responsibilities in the coastal zone through the development and implementation of management programs to achieve wise use of the land and water resources of the coastal zone.

**H. International Coral Reef Initiative – objectives call for:**

1. Governments and international organizations strengthening commitment to and implementation of programs at the local, national, regional, and international levels to conserve, restore and promote sustainable use of coral reefs and associated environments;
2. Each country and region incorporating management provisions for protection, restoration, and sustainable use of coral reefs into existing development plans;
3. Strengthening capacity for development and implementation of policies, management, research, and monitoring of coral reefs and associated environments;
4. Establishing and maintaining coordination of international, regional and national research and monitoring programs, including the Global Coral Reef Monitoring Network, in association with the Global Ocean Observing System, to ensure efficient use of scarce resources and a flow of information relevant to management of coral reefs and associated environments.

**I. U.S. Ocean Action Plan – Actions include:**

1. Implement the Coral Reef Local Action Strategies
2. Protect the Northwestern Hawaiian Island Coral Reef Ecosystem Reserve (now Marine National Monument)
3. Form new international partnerships to enhance management of coral reefs
4. Encourage all regional fishery management councils to take action, where appropriate, to protect deep-sea corals when developing and implementing regional fishery management plans
5. Develop and complete a Status Report on Deep-sea Corals in the United States Exclusive Economic Zone

**J. Memorandum of Understanding, National Fish and Wildlife Foundation**

1. Authorizes a partnership with NOAA to administer the Coral Reef Conservation Fund, which provides grants for on-the-ground coral reef ecosystem conservation and restoration activities.

**K. Memorandum of Agreement, Australian Institute of Marine Science, Great Barrier Reef Marine Park Authority, and the University of Queensland**

1. Authorizes a partnership with NOAA to enhance coral reef ecosystem research. Specifically, hydrodynamic models will be developed and used to better understand



how physical, biological and chemical patterns can be used to increase the detection of significant coral bleaching events at different spatial scales. The MOU will allow the interaction of remote sensing tools (NOAA) with highly instrumented sites in the Australian Great Barrier Reef.

**L. Memorandum of Agreement, The Nature Conservancy**

1. Authorizes a partnership with NOAA to address coral reef conservation and management needs in the U.S. and Freely Associated States.